Office

File

PROCEDURE FOR PREPARING THE H 229 PHOTOGRAPHIC RECTIFIER FOR OPERATION AND FOR CHECKING AND SETTING UP THE MAJOR VARIABLES WHEN A CHANGE IN TYPE OF IMAGE TRANSFORMATION IS DESIRED

May 31, 1962

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Enclosure

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Section I

INITIAL CONTROL SETTINGS

A. Air Supply

1. Check that proper connection from air supply to system exists.

2. Air pressure should be regulated and maintained between 60 and 80 psig. More satisfactory system operation is obtained with air pressure near 80 psig.

B. Main Power Switch - ON

C. Reader

1. 20 KV power supply - ON

2. Vacuum timing switch (MS10) - ON

3. Open front reader door.

D. Printer

1. 20 KV power supply - ON

2. Printer "X" scan motor switch (S24) - FAST

3. VACUUM switch (S32) - OFF

4. Open front printer door.

E. Console

1. "X" - "Y" Servo Amplifier (Q. Drawer)
   a. "X" Servo Power switch (S1) - ON
   b. "Y" Servo Power switch (S2) - OFF

(CAUTION - After checking or changing above switch positions. check that choppers and time delay relay are securely mounted)

2. Tape Reader (N Drawer)
   a. Power switch - ON

3. Monitor Scope (G Drawer)
   a. Power switch - ON
   b. Vertical
      1. volts/division - 5
      2. input - AC
   c. Time base
      1. time/division - .5 μ sec.
      2. horizontal display- EXT.
      3. trigger selector
         a. black knob - EXT (+).
         b. red knob - HF SYNC.
      4. intensity control- MAX. CCW.

4. Video Controller (F Drawer)

   a. Dodging area switch - OFF
   b. Monitor selector switch - LINE
   c. Scan selector switch - LINE
   d. Output selector switch - INVERSE
   e. Video gain control - MAX. CCW
   f. Blanking selector switch - NORMAL

5. Program Controller (E Drawer)

a. Power selector switch - OFF

b. Pilot light control - 50% DIM

Section II

STANDBY OPERATION

A. Lift tape reader head

B. Feed test tape into head and place over sprockets so start block is centered between triangular index marks on drum.

C. Close tape reader head.

D. Turn POWER SELECTOR switch to WARM UP.

1. WARM UP light (RED) and 20 KV power supply AC PILOT light (Reader and Printer) turn ON.

E. When READY light (GREEN) turns on, turn POWER SELECTOR switch to B+.

F. Adjust monitor scope VERTICAL and HORIZONTAL positioning controls until trace is approximately in center of monitor scope.

G. Position reader lens near center of lens scan travel by means of Reader "X" SCAN MANUAL DRIVE SWITCH (S26).

1. Move lens in forward and reverse direction, around center by means of MANUAL DRIVE switch.

   a. Above lens movement indicates the following:

      1. The +6 volt, -6 volt, and -26 volt dc power supplies are operational.

      2. "X" scan servo amplifier is operational.

   b. Return lens to approximate center position.

H. Position printer lens near center of lens scan travel by means of printer "X SCAN MANUAL DRIVE switch (S25).

1. Move lens in forward and reverse direction around center by means of MANUAL DRIVE switch.

   a. Above lens movement indicates the following:

      1. +90 volt dc power supply is operational.
      2. Brake, forward and reverse clutch are operational.

   b. Return lens to approximate center position.

I Turn POWER SELECTOR switch to HIGH VOLTAGE. (CAUTION - This Arms 20 KV power supplies)

J. Turn SCAN SELECTOR switch to RASTER.

K. Rotate printer and reader beam current control knobs in counter clockwise direction until audible click. (CAUTION - Above step turns on printer and reader 20 KV).

1. Retain PBC and RBC control knobs in CCW position.
2. HIGH VOLTAGE ON lights will turn on in 20 KV power supplies.
3. Meter on face of 20 KV supplies should indicate 20 KV.

L. Depress the START - switch and hold until Tape Reader steps into next block on test tape.

1. SCAN LIGHT (Blue) should come on.
2. Printer lens will traverse in reverse direction and stop after passing through ZERO SYNC (23) and REVERSE LIMIT (S8) switches.
3. Reader lens will traverse in reverse direction until passing through ZERO SYNC (S22) and REVERSE LIMIT (S10) switches, then change and traverse in forward direction and null out.

   a. Mark on reader lens carriage should be coincident with center of scan mark on lead screw housing.

   b. Meter on front of scan comparator (P Drawer) should read ZERO CUT 2.

M. Change BLANKING SELECTOR switch to TEST position.

N. Disengage reader panic switch. (MS 50R6)

O. Press the STOP - switch SCAN LIGHT (Blue) should turn off.

P. By means of printer "X" SCAN MANUAL DRIVE switch (S25) position lens carriage near center of travel.

Q Perform following operation to obtain proper printer and reader beam currents:

a. Set Monitor scope vertical volts/division knob to 0.01 scale. (Turn red center knob full clockwise)

b. Turn MONITOR SELECTOR switch to PBC.

c. Slowly turn printer beam current control clockwise until a change of 3 divisions in the spacing of the two horizontal lines on the monitor scope is obtained. Changes in either direction contribute to the change requirement.

1. Example: 1-1/2 divisions residual through zero to 1-1/2 divisions = 3 divisions change.

2. Example: 1 division residual not through zero to 4 divisions = 3 divisions change.

d. Turn MONITOR SELECTOR switch to RBC.
(CAUTION - Excessive beam current will burn reader CRT phosphor)

e. Slowly turn reader beam current control clockwise until 3 divisions in the spacing of the two horizontal lines on the monitor scope is obtained.

R. Set monitor scope vertical volts/division knob to 5 scale.

S. Turn MONITOR and SCAN SELECTOR switches to LINE.

T. If down time of equipment has not been excessive (2 to 3 hours minimum) then proceed to appropriate SETUP and OPERATION SECTION (III through VIII).

U. If down time of equipment has been excessive, change BLANKING SELECTOR switch to NORMAL and turn off monitor sweep with INTENSITY control. Allow 30 minute warm up period before proceeding to SETUP and OPERATION section. (SECTION III through VIII).

Section III

PROCEDURE FOR CHANGING FROM RECTIFICATION SETUP TO 4 TO 1 ENLARGEMENT SETUP AND OPERATION (INVERSE PRINT OUT)

A Proceed to step B unless equipment warmup time has been alloted. If warmup time was alloted, turn INTENSITY control clockwise on monitor scope until sweep appears and change BLANKING SELECTOR switch to TEST.

B. Observe sweep lengths on face of reader and printer cathode-ray tubes. Lengths should appear to be 3/4 inch and 3-1/8 inch respectively.

C. Printer sweep should fall within mask area, if not adjust printer "Y" CENTERING control for symmetry within mask area.

D. Change BLANKING SELECTOR switch to NORMAL.

E. If reader sweep length appears to be correct, proceed to SECTION XI (PROCEDURE FOR LOADING LIVE FILM IN PRINTER).

F. If reader sweep length appears incorrect, proceed to SECTION IX (PROCEDURE FOR SETTING READER "Y" SWEEP LENGTH).

Section IV

PROCEDURE FOR CHANGING FROM 4 TO 1 ENLARGEMENT SETUP TO RECTIFICATION SETUP AND OPERATION (INVERSE PRINT OUT)

A. Perform steps A, B, C, and D of SECTION III and one of the two following steps.

B. If reader sweep length appears incorrect, proceed to SECTION IX, (PROCEDURE FOR SETTING READER "Y" SWEEP LENGTH.)

C. If reader sweep length appears correct, proceed to SECTION X (PROCEDURE FOR CHECKING AND SETTING READER SWEEP ROTATION).

Section V

PROCEDURE FOR CHANGING FROM 4 TO 1 ENLARGEMENT SETUP TO A 1 TO 1 ENLARGEMENT SETUP AND OPERATION (INVERSE PRINT OUT)

A. Proceed to step B unless equipment warmup time has been alloted. If warmup time was alloted, turn intensity control clockwise on monitor scope until sweep appears and change BLANKING SELECTOR switch to TEST.

B. Observe sweep on face of printer cathode-ray tube for proper length of 3-1/8 inches. The sweep should fall within mask area, if not adjust printer "Y" centering control for symmetry within mask area.

C. Change BLANKING SELECTOR switch to NORMAL.

D. Change printer "X" SCAN MOTOR swithc (S24) to SLOW.

E. Make the following pressure-vacuum adjustments in reader for indexing 9 x 9 inch film.

1. Raise index plate.
2. Turn the pressure-vacuum slot adjustment knobs at front and rear of reader index plate to blue position.
3. Release and pull out platen. Rotate orifice adjustments 180° at both front and rear on underside of platen.

F. Proceed to SECTION IX (PROCEDURE FOR SETTING READER "Y" SWEEP LENGTH) to perform sweep length correction.

Section VI

PROCEDURE FOR CHANGING FROM 1 TO 1 ENLARGEMENT SETUP TO A 4 TO 1 ENLARGEMENT SETUP AND OPERATION (INVERSE PRINT OUT)

A. Perform steps A,B, and C of SECTION V and the following additional steps.

B. Change printer "X" SCAN MOTOR switch (S24) to FAST.

C. Make the following pressure-vacuum adjustments in reader for indexing 70 mm film.

1. Raise index plate.
2. Turn the pressure - vacuum adjustment knobs at front and rear of reader index plate to RED position.
3. Release and pull out platen. Rotate orifice adjustments 180° at both front and rear on underside of platen.

D. Proceed to SECTION IX (PROCEDURE FOR SETTING READER "Y" SWEEP LENGTH) to perform sweep length correction.

Section VII

PROCEDURE FOR CHANGING FROM A RECTIFICATION SETUP TO A 1 TO 1 ENLARGEMENT SETUP AND OPERATION (INVERSE PRINT OUT)

A. Perform all steps in SECTION V with no additions.

Section VIII

PROCEDURE FOR CHANGING FROM 1 TO 1 ENLARGEMENT SETUP TO A RECTIFICATION SETUP AND OPERATION (INVERSE PRINT OUT)

A. Perform all steps in SECTION VI with no additions.

Section IX

PROCEDURE FOR SETTING READER "Y" SWEEP LENGTH

A. Accurately position sweep length template so that slot is symmetrical around the X and Y center lines of the platen bow tie.

   a. Position 1/8 inch wide slot when setting up for 4T01 enlargement or a rectification.

   b. Position 1/2 inch wide slot when setting up for 1 to 1 enlargement.

B. Reposition and secure platen in place under index plate.

C. Lower index plate being careful not to disturb template position.

D. Close reader doors.

E. Change BLANKING SELECTOR switch to TEST.

F. Adjust VIDEO GAIN for best image display on monitor scope.

G. Note reader "Y" SWEEP CENTERING control setting in Video Controller (F Drawer).

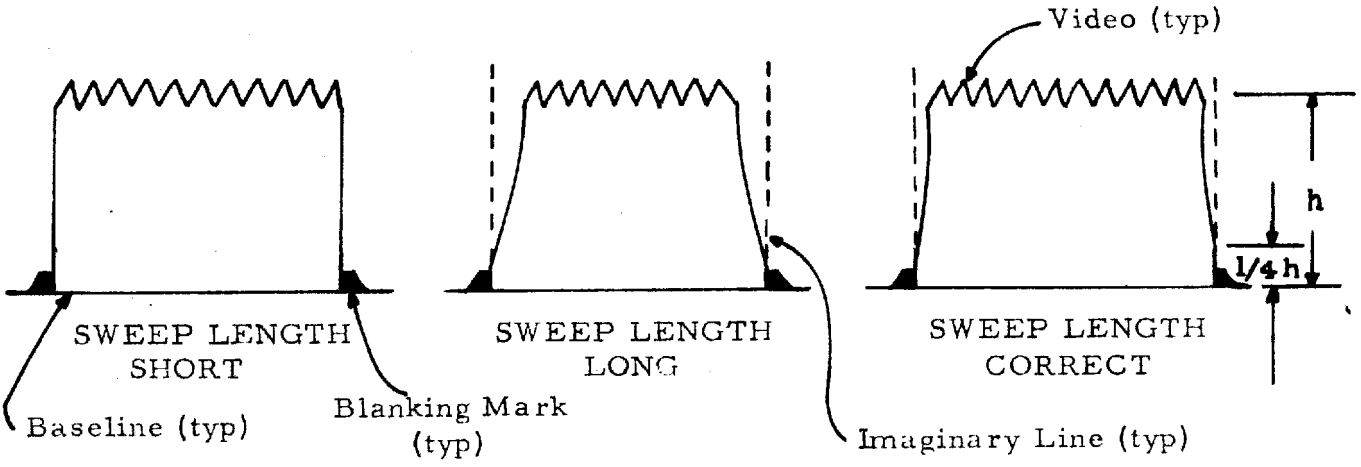
H. Adjust reader "Y" SWEEP CENTERING control until two blanking marks appear at base of monitor sweep.

I. Adjust reader "Y" SWEEP AMPLITUDE control until full sweep length appears between blanking marks.

J. Make necessary adjustment to reader "Y" SWEEP CENTERING control to obtain symmetry between blanking marks and ends of sweep.

K. Note amplitude of video signal on monitor sweep.

L. Adjust reader "Y" SWEEP AMPLITUDE control until both ends of sweep expand into the blanking marks simultaneously at a distance (measured from the base line) equal to 1/4 of the amplitude of the video signal noted in step K. Note illustration below:



M. When the sweep length is proper, the most minute movement back and forth of the reader "Y" SWEEP CENTERING control should cause the sides of the sweep at the 1/4 amplitude point to alternately disappear into and appear out of imaginary lines perpendicular to the base line at the blanking mark points.

N. A second check on proper reader sweep length can be made by observing the printer sweep. When the reader sweep length is proper, the printer sweep should be completely filled with video signal from the target in the reader and a minute movement back and forth of the reader "Y" CENTERING control should produce a very small degree of printer background at alternate ends of the printer sweep. If any printer background is observable when the reader sweep is superimposed symmetrically upon the printer sweep, the reader sweep length is short. If a minute movement back and forth of the reader "Y" CENTERING control does not produce printer background alternately at each end of the printer sweep, the reader sweep length is long.

O. Return reader "Y" CENTERING CONTROL to that setting noted in Step G.

P. Raise index plate, also release and pull out platen.

Q. Remove template from platen.

R. If a rectification transformation is desired, proceed to SECTION X (PROCEDURE FOR SETTING AND CHECKING READER SWEEP ROTATION).

S. If a 4 to 1 or 1 to 1 enlargement transformation is desired, proceed to SECTION XI (PROCEDURE FOR LOADING LIVE FILM IN PRINTER.)

Section X

PROCEDURE FOR CHECKING AND SETTING READER SWEEP ROTATION

A. Change BLANKING switch to NORMAL position then connect a scope from the CCW tap to ground on SWEEP ROTATION potentiometer (R101). Note amplitude of 3 KC sawtooth wave.

B. Connect a scope from the CW tap to ground on above potentiometer. Note amplitude of 3 KC sawtooth wave.

C. If the amplitudes are equal, proceed to step E.

D. If the amplitudes are unequal, adjust the BALANCE POTENTIOMETER (R 77) in the Video Controller (F Drawer) and repeat steps A and B. Continue repeating step D until sawtooth voltages measured in steps A and B are equal then proceed to step E.

E. Connect a scope from slider to ground on SWEEP ROTATION potentiometer. (R 101).

F. A minimum null should appear at this center position.

G. Rotate reader lead screw by hand in both directions to determine if a smaller null exists at another lens position.

H. Release hold on lead screw and allow reader lens to return to its center position.

I. If a smaller null does not exist at a lens position other than that measured in step F, proceed to step K.

J. If a smaller null does exist elsewhere than center position, proceed as follows:

1. Loosen mounting bracket of theSWEEP ROTATION potentiometer, its associated shaft and nylon gear.

2. Rotate potentiometer and bracket so that nylon gear disengages lead screw.

3. Rotate nylon gear and shaft until a minimum null is indicated on the scope.

4. Remesh gear teeth at this point to lead screw and resecure mounting bracket.

5. Repeat step G above. If a minimum null does exist at center position, proceed to step K. If minimum null still does not exist at center position, repeat step J until step F is satisfied, then proceed to step K.

K. Disconnect scope and reactivate reader PANIC switch (MS 5 or 6).

L. By means of TAPE STEP button on tape reader manually step test tape into next block.

M Depress and hold START switch until tape steps into next block on test tape.

1. SCAN LIGHT (Blue) will turn on.

2. Printer lens will traverse in reverse direction and stop after passing through ZERO SYNC (S23) and REVERSE LIMIT (S8) switches.

3. Reader lens will traverse in reverse direction until passing through ZERO SYNC(S22) and REVERSE LIMIT (S10)switches, then change and traverse in forward direction and null out. This null position is the reader lens start scan position at 65^{o}.

N. Change BLANKING switch to TEST position.

O. Disengage reader PANIC switch (MS 5 or 6)

P. Press STOP switch, SCAN LIGHT (Blue) should turn off.

Q. By means of printer "X" SCAN MANUAL DRIVE switch (S25) position lens carriage near center of travel.

R. From the front of the reader, insert rotation template to right of CRT center and between the cathode-ray tube housing and its mounting plate. The CRT trace and the edge of the template should have the same angle and be coincident.

S. If coincidence does not exist, vary the Reader "X" AMPLITUDE potentiometer in the Video Controller (F Drawer) until coincidence does exist.

T. Remove rotation template.

U. Change BLANKING SWITCH to NORMAL.

V. Proceed to SECTION XI (PROCEDURE FOR LOADING LIVE FILM IN PRINTER.)

Section XI

PROCEDURE FOR LOADING LIVE FILM IN PRINTER

A. If necessary, change BLANKING switch to NORMAL position and reactivate printer PANIC switch (MS 20 or 21).

B. In darkroom place spool of live film in supply cassette. Make sure that spool engages driving pin and passes over detent. Film should come off bottom of roll.

C. Pull approximately 3 feet of film from cassette and close sliding cassette door fully. A resistance to closure will be felt just prior to full closure condition.

D. Insert cassettes in printer with supply cassette positioned at front of printer. Thread excess film from step C under tension roller, over platen to far side.

E. If no printer "Y" SWEEP LENGTH correction is required proceed to step G.

F. If printer "Y" SWEEP LENGTH correction is required, proceed now to SECTION XII (PROCEDURE FOR SETTING "Y" SWEEP LENGTH).

G. Thread film under tension roller on take-up cassette side and into take-up cassette. Feed film around bottom of spool in takeup cassette and tape film on spool.

H. Turn off room lights, any lights from instrumentation etc. Turn down intensity control on monitor scope and extinguish pilot lights on Program Controller (E Drawer) by means of PILOT LIGHT CONTROL.

I. Open supply cassette door and lift supply cassette slightly. Pull off enough film to allow wrinkle developed by cassette door to pass into takeup cassette. Replace supply cassette and wind excess film into takeup cassette.

J. Raise pins in platen, open jaws of film index and slide film between jaws until film just touches both pins. Close jaws and lower pins.

K. Lower curtains on both sides of platen, turn on vacuum, close all printer doors, then turn on room lights, turn up monitor scope intensity control and set PILOT LIGHT CONTROL for 50% DIM.

L. Proceed to SECTION XIII (PROCEDURE FOR ALIGNING NEGATIVE IN READER).

Section XII

PROCEDURE FOR SETTING PRINTER "Y" SWEEP LENGTH

A. IMPORTANT: Note and record the reading of printer "Y" SWEEP AMPLITUDE control. Between numbers on the face of the outer dial on the above control, there are 5 notches, after establishing a final reference point adjacent to outer dial, this means that as each notch passes this reference, the dial has moved two tenths the distance between adjacent outer dial numbers.

B. Turn off room lights, any lights from instrumentation, etc. Turn down intensity control on monitor scope and extinguish pilot lights on Program Controller (E Drawer) by means of PILOT LIGHT CONTROL.

C. Open supply cassette door and lift supply cassette slightly. Pull off enough film to allow wrinkle developed by cassette door to pass over rear platen, then replace supply cassette.

D. Raise pins in platen, open jaws of film index and slide film between jaws until film just touches both pins. Close jaws and lower pins.

E. Lower curtains on both sides of platen, turn on vacuum, close all printer doors and then turn on room lights only.

F. Turn reader film index MANUAL RETURN switch (MS16) to OFF position. Place a 9 x 9 inch film or 70 mm film over the platen vacuum slots in reader. Film size used should comply with transformation being set up. Turn film index MANUAL RETURN switch ON.

G. Close and secure reader platen then lower reader index plate. Leave reader door open.

H. Turn VIDEO GAIN control on Video Controller (F Drawer) to CCW position.

I. During equipment operation, when the tape is not continuously stepping the tape reader head is over the first check block after having just passed over the 21st check block and data block. The following major operations are taking place at this time:

* 1. Reader is indexing film.

2. Printer is indexing film.

3. Reader CRT sweep amplitude and rotation information are applied to reader CRT deflection coils. (Rotation information is only applicable to rectification).

* 4. Reader lens is returning to starting position and then nulling out to position information in 1st check block.

5. Printer lens is returning to starting position and will remain there until all programming operations are complete.

NOTE: The operations noted by asterisk(*) are not being performed at this time because of being deactivated in previous steps.

J. Once the programming operation is complete the printer lens will traverse in forward direction and when the ZERO SYNC switch (S23) is activated the reader lens will start forward from its null position and the tape will start stepping continuously. After 20 such steps the tape reader head will be over the 21st check block which is the end of scan block. At this time two rapid tape steps will take place stepping the tape into the data block and 1st check block in preparation for the next scan at which time the described cycle is repeated.

K. It is possible to stop any programming or scan operation by depressing the STOP switch. Therefore by counting 20 tape steps from the time the tape starts stepping continuously and pushing the STOP button on the 20th count, equipment operation will stop with the reader and printer lens at their end

of scan positions and the tape head over the 21st check block.

L. The equipment can be returned to normal operation by depressing the START switch which will create two rapid tape steps from the 21st check through the data block into the 1st check block.

NOTE: If the STOP switch is depressed at any time other than when the tape is in the 21st check block or START block, the equipment will not operate when the START switch is depressed. The tape must be manually stepped by the push button TAPE STEP switch on the Tape Reader (N Drawer) until the 21st check block or DATA block is reached. Depressing the START switch at this time will put equipment into operation.

M. Lift tape reader head and remove test tape. Feed a continuous tape into head and place over sprockets so start block is centered between triangular index marks on drum.

1. Use a 4 to 1 tape when setting up for a 4 to 1 enlargement or rectification.

2. Use a 1 to 1 tape when setting up for a 1 to 1 enlargement.

N. Depress and hold START switch until tape steps into next block. The equipment is now in operation and will scan continuously.

O. After 3 scans press STOP switch by method described in step K; turn lights out.

P. Open printer front door and index film by depressing FILM MANUAL INDEX switch (S28).

Q. Unlock printer "Y" SWEEP AMPLITUDE control and change dial setting by means similar to that described in step A. Record dial change by notch movement.

R. Lock printer "Y" SWEEP AMPLITUDE control, close printer door, and turn lights on.

S. Repeat steps N through P until it is felt that sufficient data are collected.

T. On last data run, after STOP switch is depressed and lights are out, open printer door and tear film smoothly near exit of supply cassette.

U. Close supply cassette door firmly and turn vacuum off.

V. Lift jaws of film index and remove film and place in light tight container.

W. Turn lights on and record "Y" SWEEP AMPLITUDE control final setting.

1. Since original and final settings are known and notch movement for each set of data is known, it is possible to compute to a great degree the dial number corresponding to the other dial settings.

X. Develop film and determine if proper printer "Y" sweep length can be interpolated from film and computed information. If so, set "Y" SWEEP AMPLITUDE control to computed value. Proceed to Step Z.

Y. If proper "Y" SWEEP AMPLITUDE control setting is still indeterminate because of insufficient data, Repeat steps B, C, D, E and N through X until proper printer sweep length is obtained.

Z. Turn reader film index MANUAL RETURN switch (MS 16) to OFF position then raise index plate. Release and pull out platen and remove film. Turn reader film index MANUAL RETURN switch (MS 16) to ON position.

AA. Pull approximately 3 feet of film from cassette and close sliding cassette door fully. Load film in printer per steps, D and G through K of SECTION XI. (PROCEDURE FOR LOADING LIVE FILM IN PRINTER).

BB Proceed to SECTION XIII (PROCEDURE FOR ALIGNING NEGATIVE IN READER).

Section XIII

PROCEDURE FOR ALIGNING NEGATIVE IN READER

A. Film Preparation:

1. Transformation accuracy greatly depends upon correct alignment of a properly annotated negative on the reader platen and precise knowledge of the analytical image transformation. Fiducial marks on the reading platen must be aligned with principal line of the photograph and its perpendicular at the edge.

2. On the emulsion side of original negative, scribe a line 5-inches from the center of the first strip scan. This can be noted as the START MARK, and will allow for correct "Y" axis orientation of the first scan center if START block has no film index information.

B. Turn reader film index MANUAL RETURN switch (MS 16) to OFF position. If necessary, raise reader index plate also release and pull out platen.

C. Prepare negative to emerge emulsion side up when placed in film supply assembly in front of reader. Thread film under supply tension roller. Place a piece of leader on top of film and push both between platen and index plate until they emerge on other side of platen. Pull leader out and thread film under takeup tension roller into film takeup assembly.

D. Place principal line such that it is coincident with the 15 cm marks on both rules on the reader platen. This alignment will yield correct "X" axis orientation between principal line on negative and center of scan travel of both reader lens and CRT sweep.

E. For correct "Y" axis orientation of the first scan center, place START mark of step A (part 2) at the front edge of the rule nearest the front of the reader.

F. Repeat steps D and E until precise alignment of the principal line and START mark are obtained.

G. Turn reader film index MANUAL RETURN switch to ON position.

1. Hoses to platen should be compressed.

2. Open printer LOWER front door. Vacuum gage should read between 15 and 20 inches of Hg. Low readings indicate vacuum leakage at reader or printer platen. If vacuum is adequate, close printer door.

H. Close and secure reader platen then lower reader index plate being careful not to move the film.

I. Carefully move reader index plate until dial indicator reads ZERO.

J. Proceed to SECTION XIV (PROCEDURE FOR FINAL OPERATIONAL STATUS).

Setction XIV

PROCEDURE FOR FINAL OPERATIONAL STATUS

A. Check that the following status conditions are as noted. Change status to comply if necessary.

1. PMT assembly is under reader lens and PMT limit switch is deactivated.

2. All reader doors closed.

3. "X" and "Y" Servo Power switches - ON.

4. Monitor Scope vertical volts/division on 5 and intensity control turned up so sweep is observable.

5. Monitor Selector switch - LINE.

6. Scan Selector switch - LINE.

7. Video Gain control - 1.0.

8. Blanking Selector switch - NORMAL.

9. Pilot Light control - 50% DIM.

B. If test tape or tape not applicable to transformation desired is in tape reader, lift tape reader head and remove tape. If desired tape is in tape reader, press manual step switch on tape reader until START block is under tape reader head. If another tape is required feed tape into head and place over sprocket holes so start block is centered between triangular index marks on drum.

C. Set the DODGING AREA switch to SMALL or OFF as desired.

D. If the DODGING AREA switch is in OFF position, adjust VIDEO GAIN control for desired video level during first scan.

E. Depress and hold START switch until tape steps into next block. The equipment is now in operation and will scan continuously.